In the Claims:

Kindly cancel claims 2, 3, and 5.

Kindly amend the claims as follows:

1. (Currently amended) A gas sensor for monitoring and controlling combustion processes comprising a sensor material of a perovskite structure oxide of formula ABO_x, wherein the A is a large 3-valent ion, wherein B is a transition metal ion substituted to a small degree by tungsten, and wherein x denotes a variable oxygen stoichiometry, whercin bulk stoichiometry of the oxide equilibrates with prevailing oxygen partial pressure, wherein the perovskite formula is $AB_{1-y}W_yO_x$, wherein y is in a range between 0.03 and 0.15, and wherein x is about 3.

2. (Canceled)

3. (Canceled

4. (Currently amended) The sensor of claim ~~3~~ 1, wherein y is in a range between 0.05 and 0.10.

5. (Canceled

6. (Currently amended) The sensor of claim ~~2~~ 1, wherein the perovskite structure is $PrFe_{0.95}W_{0.05}O_x$.

7. (Currently amended) The sensor of claim ~~2~~ 1, wherein the perovskite structure is $LaFe_{0.95}W_{0.05}O_x$.

8. (Original) The sensor of claim 1, wherein the perovskite structure does not form stable sulfates in environments contaminated by sulfur.

9. (Original) The sensor of claim 1, wherein minimum doping on the B-site provides a required range of oxygen partial pressure operation.

10. (Original) The sensor of claim 9, further comprising a 6-valent ion for doping on the B-site.

11. (Original) The sensor of claim 10, wherein the 6-valent ion enables a p-type range of the perovskite structure for use over a range of oxygen partial pressures of interest for monitoring and controlling the combustion processes.

12. (Currently amended) A method of preparation of the sensor material of claim ~~2~~ 1, comprising reacting starting material oxides in stoichiometric proportions in a molten salt, yielding a powder, screen-printing the powder on a substrate, forming a microstructure, and forming the sensor.

13. (Currently amended) A method of sensing combustion status of an atmosphere of combustion gases comprising contacting the sensor material as described in claim ~~2~~ 1 with the atmosphere, sensing change in conductance, resistance, capacitance and/or impedance in the sensor material, and monitoring and controlling combustion processes responsive to the change sensed in the sensor material.